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EXAMINER

HUSSAIN, IMAD

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/684,387	Applicant(s) GELVIN ET AL.	
	Examiner IMAD HUSSAIN	Art Unit 2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10 December 2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-44 are pending in application 09/684387.

Information Disclosure Statement

2. The information disclosure statement filed 30 November 2001 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

5. Claim 27 is objected to because of the following informality: “queuing” is misspelled as “queing”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 5-10, 12-15, 17-18, 22-23, 27-29, 32, 35, 40-42 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Agre et al. (US 6208247 B1, hereinafter Agre).

Regarding claims 1 and 44, Agre teaches *a sensor node comprising at least one substrate* [Agre: Column 5 Lines 18-20 “sensor”] *coupled among at least one processor*

[Agre: Column 5 Lines 32-33] *and at least one energy source* [Agre: Column 4 Lines 66-67], *wherein the at least one substrate is at least one sensor* [Agre: Column 5 Lines 18-20], *wherein functions of the sensor node are remotely controllable and the sensor node is programmable via wireless internetworking among a plurality of network elements* [Agre: Column 5 Lines 40-44 and Column 15 Lines 12-17].

Regarding claim 5, Agre teaches *at least one device selected from a group consisting of at least one preprocessor* [Agre: Column 5 Lines 20-28 and Column 6 Line 2], *at least one interface, at least one application programming interface (API), at least one antenna, and at least one transmitter.*

Regarding claim 7, Agre teaches that *the at least one interface includes at least one communication interface supporting at least one communication mode selected from a group consisting of wireless communications, wired communications, and hybrid wired and wireless communications* [Agre: Column 1 Lines 37-40 and Column 2 Lines 30-31].

Regarding claim 8, Agre teaches *at least one state machine controlling at least one function selected from a group consisting of sensing, signal processing, data processing, event recognition, communication, power management, and network assembly* [Agre: Column 3 Lines 30-44].

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Regarding claim 9, Agre teaches *at least one communication physical layer including radio frequency (RF) power management* [Agre: Column 3 Lines 53-56].

Regarding claim 10, Agre teaches that *the at least one processor is coupled to at least one component selected from a group consisting of actuators, sensors, signal processors, interfaces, power supplies, data storage devices, and communication devices* [Agre: Figure 3].

Regarding claim 12, Agre teaches that *the at least one energy source includes a thin film photovoltaic device, wherein the thin film photovoltaic device is an energy source and an optical presence detection sensor* [Agre: Column 5 Lines 61-63 and Column 6 Line 65].

Regarding claim 13, Agre teaches that *the sensor node is coupled to at least one item selected from a group consisting of machinery components, electronic equipment, mechanical equipment, electro-mechanical equipment, a facility, a structure, a material, a biological system, people, animals, vegetation, clothing, crates, packages, product containers, shipping containers, a transportation system, vehicle components, an outdoor area, and an indoor area* [Agre: Column 4 Lines 51-58 and Column 1 Lines 8-13].

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Regarding claim 14, Agre teaches that *the at least one sensor receives at least one signal type selected from a group consisting of temperature, shock, vibration, motion, acceleration, tip, light, sound, and package opening and closing* [Agre: Column 3 Lines 14-16].

Regarding claim 15, Agre teaches that *the plurality of network elements comprise a sensor network including at least one element selected from a group consisting of at least one node, at least one gateway, at least one server, at least one network, at least one client computer hosting a World Wide Web browser, at least one interrogator, and at least one repeater* [Agre: Column 2 Lines 46-48].

Regarding claim 17, Agre teaches that *the at least one node includes sensing, processing, communications, and storage devices* [Agre: Figure 3] *supporting a plurality of processing and protocol layers* [Agre: Column 11 Line 1 and Column 12 Lines 35-43].

Regarding claim 18, Agre teaches that the sensor node is *coupled to the at least one client computer* [Agre: Column 5 Lines 40-44] *through the plurality of network elements, wherein the at least one node supports at least one communication mode selected from a group consisting of wireless communications, wired communications, and hybrid wired and wireless communications* [Agre: Column 1 Lines 37-40 and Column 2 Lines 30-31], *wherein at least one redundant communication pathway* [Agre: Figure 2] *is established among the plurality of network elements.*

Regarding claim 22, Agre teaches that *the plurality of network elements comprise a plurality of network element sets that are layered*. [Agre: Column 12 Lines 35-43 and Column 11 Lines 34-36].

Regarding claim 23, Agre teaches that *the at least one node comprises a plurality of node types, wherein the plurality of node types includes at least one node of a first type and at least one node of a second type* [Agre: Column 3 Lines 50-53 “user” and non-user nodes], *wherein a first network having a first node density is assembled using the at least one node of a first type, wherein a second network having a second node density is assembled using the at least one node of a second type, wherein the second network is overlayed onto the first network* [Agre: Column 11 Lines 34-39].

Regarding claim 27, Agre teaches that *data processing is controlled using at least one processing hierarchy* [Agre: Column 9 Lines 62-65], *the at least one processing hierarchy controlling at least one event selected from a group consisting of data classifications, data transfers, data queuing, data combining, processing locations, communications among the plurality of network elements* [Agre: Column 10 Line 64].

Regarding claim 28, Agre teaches that *data is transferred using message packets, wherein the message packets are aggregated into compact forms in the plurality of network elements using message aggregation protocols* [Agre: Column 3 Lines 7-9],

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wherein the message aggregation protocols are adaptive to data type, node density, message priority, and available energy [Agre: Column 6 Lines 5-8].

Regarding claim 29, Agre teaches that *the functions of the at least one node include data acquisition, data processing, communication, data routing, data security, programming, and node operation [Agre: Column 3 Line 8].*

Regarding claim 32, Agre teaches that *the at least one node controls data processing and data transmission in response to a probability of a detected event [Agre: Column 11 Lines 50-58].*

Regarding claim 35, Agre teaches that *data is collected from the sensor node by the at least one node, wherein at least one operation is performed on the data in response to parameters established by a user, the at least one operation selected from a group consisting of energy detection, routing, processing, storing, and fusing, wherein the routing, processing, storing, and fusing are performed in response to at least one result of the energy detection [Agre: Column 5 Lines 29-44].*

Regarding claim 40, Agre teaches that *at least one of the plurality of network elements determines a position of the sensor node [Agre: Column 12 Lines 33-50].*

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Regarding claim 41, Agre teaches that *the sensor node determines at least one position using location information received from at least one of the plurality of network elements* [Agre: Column 12 Lines 33-50].

Regarding claim 42, Agre teaches that *data is collected by the at least one sensor, wherein at least one operation is performed on the data in response to parameters established by a user, the at least one operation selected from a group consisting of aggregating the data with data collected from other sensor nodes, energy detection, routing, processing, storing, and fusing* [Agre: Column 5 Lines 29-44].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agre in view of Fischer et al. (US 5420825, hereinafter Fischer).

Regarding claim 2, Agre does not explicitly disclose that *the at least one substrate comprises active and passive substrates*.

However, Fischer discloses a sensor system that comprises both active and passive substrates [Fischer: Column 1 Lines 49-52].

Agre and Fischer are analogous art in the same field of endeavor as both describe sensor systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the sensor details of Fischer for using particular sensor types in the sensor system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Age with the sensor types of Fischer because in doing so, the system would allow for better trade-offs in power usage and sensitivity [Fischer: Column 3 Lines 13-16].

Regarding claim 3, Agre-Fischer teaches that *the at least one substrate comprises at least one thin film substrate* [Agre: Column 6 Lines 35-37], *wherein the at least one thin film substrate comprises a piezoelectric polymer film* [Fischer: Column 1 Lines 49-52], *wherein the piezoelectric polymer film is polyvinylidenedifluoride (PVF₂)* [Fischer: Column 3 Lines 13-16].

Regarding claim 4, Agre-Fischer teaches that *the at least one substrate is conformal* [Fischer: Column 1 Lines 30-32].

Regarding claim 11, Agre-Fischer teaches that *the at least one sensor comprises at least one sensor selected from a group consisting of passive and active sensors* [Fischer: Column 1 Lines 49-52], *wherein the passive and active sensors include seismic sensors, acoustic sensors, optical sensors, infrared sensors, magnetic sensors, thermal sensors, accelerometers, and bi-static sensors* [Agre: Column 3 Lines 14-20].

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre in view of Bassen et al. (US 3475755, hereinafter Bassen).

Regarding claim 6, Agre teaches at least one antenna [Agre: Column 4 Line 67].

Agre does not explicitly disclose that *the at least one antenna includes a dielectric ring antenna* [Agre: Column 5 Lines 20-28].

However, Bassen discloses a dielectric ring antenna [Bassen: Claim 4].

Agre and Bassen are analogous art in the same field of endeavor as both describe devices with antennas. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the dielectric ring scheme of Bassen for reducing interference in the wireless sensor node of Agre. One of ordinary skill in the art would have been motivated to modify the wireless sensor node of Agre with the dielectric ring scheme of Bassen because in doing so, the system would allow for minimizing interference between the antenna and the body on which it is mounted [Bassen: Column 2 Lines 15-19].

11. Claims 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agre in view of Sohrabi et al. (*A Self Organizing Wireless Sensor Network*, applicant's prior art, hereinafter Sohrabi) in further view of Poor et al. (US 6028857, hereinafter Poor).

Regarding claim 16, Agre teaches that *the at least one node is coupled among a monitored environment and at least one client computer* [Agre: Column 11 Line 6 “user interface node”], *wherein functions of the at least one node are remotely controllable using the at least one client computer* [Agre: Column 5 Lines 40-44], *wherein the at least one node provides node information to the plurality of network elements* [Agre: Column 2 Lines 35-43], *wherein data processing is distributed through the sensor network in response to the node information* [Agre: Column 2 Lines 35-43].

Agre does not explicitly disclose that *the information* includes *message priority*.

However, Sohrabi teaches nodal communication using a message prioritization system [Sohrabi: Section 3 Paragraph 2].

Agre and Sohrabi are analogous art in the same field of endeavor as both describe nodal communications systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the priority scheme of Sohrabi for prioritizing messages in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the priority scheme of Sohrabi because in doing so, the system would allow for a higher quality of service [Sohrabi: Section 3 Paragraph 2].

The combination of Agre-Sohrabi does not explicitly disclose that *the information* includes *node resource cost*.

However, Poor teaches nodal communications using a node resource cost [Poor: Column 2 Lines 31-37 and Figures 2-3].

Agre-Sohrabi and Poor are analogous art in the same field of endeavor as both describe nodal communications systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the resource cost scheme of Poor for defining costs of resources in the system of Agre-Sohrabi. One of ordinary skill in the art would have been motivated to modify the system of Agre-Sohrabi with the resource cost scheme of Poor because in doing so, the system would allow for more resource/energy-efficient routing [Poor: Column 2 Lines 31-37].

Regarding claim 25, the combination of Agre-Sohrabi-Poor teaches that the plurality of network elements automatically organize in response to the node information, wherein the automatic organizing comprises automatically controlling data transfer, processing, and storage within the network [Agre: Column 9 Lines 13-21, Figure 7, and Column 11 Line 30-Column 12 Line 54].

12. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agre in view of Myer et al. (US 6615088 B1, hereinafter Myer).

Regarding claim 19, Agre does not explicitly disclose *that the at least one gateway performs at least one function selected from a group consisting of protocol translation, sensor network management, management of transmissions from a remote user, and interfacing with at least one communication physical layer including wired local area*

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network, packet radio, microwave, optical, wireline telephony, cellular telephony, and satellite telephony.

However, Myer discloses a gateway for interacting with transmissions from a remote user [Myer: Column 3 Lines 11-20] and interfacing with a wired local area network [Myer: Column 1 Lines 53-55].

Agre and Myer are analogous art in the same field of endeavor as both describe remote control of nodes. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the gateway scheme of Myer for providing a user interface in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the gateway scheme of Myer because in doing so, the system would allow for greater ease of use.

Regarding claim 20, the combination of Agre-Myer teaches that *at least one network includes wired networks, wireless networks, and hybrid wired and wireless networks* [Myer: Column 2 Lines 58-60], *wherein the at least one network comprises at least one network selected from a group comprising the Internet, local area networks, wide area networks, metropolitan area networks, and information service stations* [Myer: Figure 1].

Regarding claim 21, Agre-Myer teaches that *the internetworking comprises providing remote accessibility using World Wide Web-based tools to data, code, management, and security functions, wherein data includes signals and images, wherein code includes signal processing, decision support, and database elements, and wherein*

management includes operation of the plurality of network elements [Myer: Column 4 Lines 28-50].

13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 15 above in view of Davis et al. (US 5742829, hereinafter Young).

Regarding claim 24, Agre does not explicitly disclose that *code and data anticipated for future use are predistributed through the sensor network using low priority messages, wherein the code and the data are downloadable from at least one location selected from a group consisting of storage devices of the plurality of network elements, and storage devices outside the sensor network.*

However, Davis discloses a network wherein code and data anticipated for future use is distributed through low-priority background messages and code and data are downloadable from a storage device [Davis: Column 6 Lines 27-65].

Agre and Davis are analogous art in the same field of endeavor as both describe network communications. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the data distribution scheme of Davis for pre-distributing anticipated information in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the data distribution scheme of Agre because in doing so, the system would minimize the waiting time required to download data [Davis: Column 2 Lines 10-15].

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 15 above in view of C. David Young (*A Unifying Dynamic Distributed Multichannel TDMA Slot Assignment Protocol*, applicant's submitted prior art, hereinafter Young).

Regarding claim 26, Agre does not explicitly disclose that *a plurality of levels of synchronization are supported among different subsets of the plurality of network elements, wherein a first level of synchronization is supported among a first subset of the plurality of network elements, wherein a second level of synchronization is supported among a second subset of the plurality of network elements.*

However, Young describes a mechanism by which *a plurality of levels of synchronization are supported among different subsets of the plurality of network elements, wherein a first level of synchronization is supported among a first subset of the plurality of network elements, wherein a second level of synchronization is supported among a second subset of the plurality of network elements* [Young: Page 2].

Agre and Young are analogous art in the same field of endeavor as both describe distributed multi-hop radio networks. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the USAP technique of Young for managing multiple synchronization schemes in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the USAP scheme of Young because in doing so, the system would allow for the use of a distributed algorithm for using diverse synchronization schemes [Young: Page 1].

15. Claims 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 15 above in view of Hayball et al. (US 6233610 B1, hereinafter Hayball).

Regarding claim 30, Agre teaches that *the at least one node includes at least one processor to control the sensor node and at least one device selected from a group consisting of sensors, actuators, communications devices, signal processors, information storage devices, node controllers, and power supply devices, supporting remote reprogramming and control of the at least one device* [see Claim 1].

Agre does not explicitly disclose *application programming interfaces (APIs), wherein the plurality of APIs are coupled to the at least one processor wherein the plurality of APIs are layered*.

However, Hayball discloses such a plurality of layered APIs [Hayball: Column 5 Lines 48-54 and Figure 13] coupled to a node's processor [Hayball: Figure 5].

Agre and Hayball are analogous art in the same field of endeavor as both describe network management systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the layered API scheme of Hayball for using multiple frameworks in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the layered API scheme of Hayball because in doing so, the system would allow for simplified construction of the software of a network system [Hayball: Column 4 Lines 36-39].

16. Claims 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre and Hayball as applied to claim 30 above in view of Sohrabi.

Regarding claim 31, the combination of Agre-Hayball teaches that *the plurality of APIs enable distributed resource management* [Hayball: Column 1 Lines 38-50] *by providing network resource information* [Hayball: Column 13 Lines 6-12] *to the plurality of network elements, wherein information transfer among the plurality of network elements is controlled using a synchronism hierarchy* [Hayball: Column 25 Lines 35-37] *established in response to the resource information.*

Agre-Hayball does not explicitly disclose that *the information includes message priority.*

However, Sohrabi teaches nodal communication using a message prioritization system [Sohrabi: Section 3 Paragraph 2].

Agre-Hayball and Sohrabi are analogous art in the same field of endeavor as both describe nodal communications systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the priority scheme of Sohrabi for prioritizing messages in the system of Agre-Hayball. One of ordinary skill in the art would have been motivated to modify the system of Agre-Hayball with the priority scheme of Sohrabi because in doing so, the system would allow for a higher quality of service [Sohrabi: Section 3 Paragraph 2].

17. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 15 above in view of Clare (US 6414955 B1, hereinafter Clare).

Regarding claim 33, Agre teaches that *the plurality of network elements are self-assembling* [Agre: Column 10 Lines 11-15].

Agre does not explicitly disclose *search and acquisition modes of the at least one node search for participating ones of the plurality of network elements, wherein a determination is made whether each of the participating ones of the plurality of network elements are permitted to join the sensor network using a message hierarchy, wherein the sensor network is surveyed at random intervals for new nodes and missing nodes.*

However, Clare teaches such a method of node searching and joining [Clare: Column 8 Lines 7-48].

Agre and Clare are analogous art in the same field of endeavor as both describe distributed topography learning methods for wireless networks. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the nodal connection scheme of Clare for joining sensor nodes in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the nodal connection scheme of Clare because in doing so, the system would allow for the nodes to communicate with each other in an ad-hoc manner [Clare: Abstract].

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18. Claims 34 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 15 above in view of LeBlanc et al. (US 6236365 B1, hereinafter LeBlanc).

Regarding claim 34, Agre does not explicitly disclose that *the plurality of network elements further include at least one database, wherein the at least one database includes at least one storage device selected from a group consisting of storage devices coupled to at least one of the plurality of network elements and storage devices of the at least one node, wherein the at least one database comprises data-driven alerting methods that recognize conditions on user-defined data relationships including coincidence in signal arrival, node power status, and network communication status.*

However, LeBlanc teaches such a database coupled in a node [LeBlanc: Column 54 Lines 36-41 and Figures 4 and 43 (DA, DB)] with data-driven alerting methods recognizing said conditions [LeBlanc: Column 61 Lines 30-67].

Agre and LeBlanc are analogous art in the same field of endeavor as both describe networked sensor systems. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the database scheme of LeBlanc for ordered information storage in the system of Agre. One of ordinary skill in the art would have been motivated to modify the system of Agre with the database scheme of LeBlanc because in doing so, the system would allow for more orderly storage of received data.

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Regarding claim 36, Agre-LeBlanc teaches that *the routing comprises selecting at least one data type for routing, selecting at least one of the plurality of network elements to which to route the selected data, selecting at least one route to the selected at least one of the plurality of network elements, and routing the selected at least one data type to the selected at least one of the plurality of network elements* [Agre: Column 9 Lines 49-53 and Column 11 Lines 34-36].

Regarding claim 37, Agre-LeBlanc teaches that *the processing comprises selecting at least one data type for processing, selecting at least one processing type, selecting at least one of the plurality of network elements to perform the selected at least one processing type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the sensor network* [Agre: Column 9 Lines 49-53 and Column 1 Lines 34-36], *wherein the selection of at least one processing type comprises determining at least one probability associated with a detected event and selecting at least one processing type in response to the at least one probability* [LeBlanc: Column 8 Lines 5-10].

Regarding claim 38, Agre-LeBlanc teaches that *the storing comprises selecting at least one data type for storage, selecting at least one storage type, selecting at least one of the plurality of network elements to perform the selected at least one storage type, and transferring the selected at least one data type to the selected at least one of the*

plurality of network elements using at least one route through the sensor network [Agre: Column 11 Line 61-Column 12 Line 12].

Regarding claim 39, Agre-LeBlanc teaches that *the fusing comprises a first node transmitting at least one query request to at least one other node, wherein the first node collects data from the at least one other node in response to the at least one query request and processes the collected data* [Agre: Column 9 Lines 53-65].

19. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agre as applied to claim 1 above in view of Mann et al. (US 6809653 B1, hereinafter Mann).

Regarding claim 43, Agre teaches that *at least one substrate comprises a thin film tape* [Agre: Column 6 Lines 35-37].

Agre does not explicitly disclose that *the thin film tape includes an adhesive*.

However, Mann discloses a sensory system that includes an adhesive [Mann: Column 2 Lines 53-56].

Agre and Mann are analogous art in the same field of endeavor as both describe sensor nodes. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the adhesive scheme of Mann for securing a sensor in the system of Agre. One of ordinary skill in the art would have been motivated to modify

the sensor of Agre with the adhesive scheme of Mann because in doing so, the sensor would remain attached in the proper location [Mann: Column 2 Lines 53-56].

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 1-5 and 7-44 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of U.S. Patent No. 6735630 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because a comparison between instant application independent claim 1 and claim 1 of the patented claims reveal that patented claim 1 is simply species of the broader claim 1 of the instant application. Hence, claim 1 of the instant application is generic to the species of the invention covered by claim 1 of the patent. Thus, the broad generic invention is anticipated by the narrower of the species of the patented invention, thus without a terminal disclaimer, the species claims preclude issuance of the generic application. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IMAD HUSSAIN whose telephone number is (571) 270-3628. The examiner can normally be reached on Monday through Friday from 0800 to 1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IH/

Imad Hussain
Examiner

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2151